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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,292	12/30/2003	Gerard Van Oerle	36347	9812
116	7590	06/05/2006	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			BRINEY III, WALTER F	
			ART UNIT	PAPER NUMBER
			2615	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/749,292

Applicant(s)

VAN OERLE, GERARD

Examiner

Walter F. Briney III

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☒ Claim(s) 8 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>28 July 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claims 8 and 16 are objected to because of the following informalities:**

The phrase “generating...a 50%-duty cycle for the clock signal” as recited in the claims does not make sense. It is submitted that the phrase should be “generating the clock signal with a 50%-duty cycle.” Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-7, 9-15, 17-22 and 24-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Pedersen (WO 03/026348 A1).**

Claim 1 is limited to “a method to optimize energy consumption in a hearing device in which one of several programs can be selected.” Pedersen discloses a hearing aid with performance-optimized power consumption for variable clock, supply voltage and DSP processing parameters. See Abstract. Figure 1 of Pedersen depicts the hearing aid. Pedersen discloses on pages 17, line 24, through page 18, line 14, that the hearing aid is capable of selecting between a plurality of DSP algorithms or “programs.” In the first embodiment, a monitor selects the appropriate program. In the

second embodiment, a user manually chooses the program and. Pages 17 and 18 also indicate that the PCCM “adjusts a clock frequency of a clock signal driving processing units of the hearing device.” Pedersen discloses on page 21, lines 12-28, the details on adjusting clock frequency. In essence, a clock frequency is chosen in direct proportion to the complexity of the selected program; the complexity corresponds to the “knowledge of computing power.” The appropriate frequency required by the complexity of the selected program is inherently stored or generated and retrieved, and thus, corresponds to “received information regarding a selected program.” Besides the frequency information noted above, either the output of the monitor circuit mentioned on page 17 or the input from the user regarding a preferred program mentioned on page 18 could be regarded as the “received information.” Therefore, Pedersen anticipates all limitations of the claim.

Claim 2 is limited in part to “the method of claim 1,” as covered by Pedersen. Pedersen further discloses on page 21, lines 12-28, “adjusting a supply voltage supplying processing units with energy in the hearing device.” Complexity (i.e. “computing power”) is taken into account in determining the supply voltage. In this case, supply voltage is directly determined by clock frequency, which in turn is determined by complexity. Therefore, Pedersen anticipates all limitations of the claim.

Claim 3 is limited in part to “the method of claim 2,” as covered by Pedersen. Pedersen discloses on page 20, lines 11-30, lowering the supply voltage from the battery voltage. Therefore, Pedersen anticipates all limitations of the claim.

Claim 4 is limited in part to “the method of claim 2,” as covered by Pedersen. Pedersen discloses on page 21, line 26, through page 22, line 5, increasing the voltage provided to the DSP core from the battery voltage. It is further noted that the DSP core includes RAM elements, such that the applied core voltage corresponds to “a memory supply voltage.” Therefore, Pedersen anticipates all limitations of the claim.

Claim 5 is limited in part to “the method of claim 2,” as covered by Pedersen. From the rejections of claims 3 and 4, it is clear that the hearing aid of Pedersen generates both supply and memory voltages at any time. Therefore, Pedersen anticipates all limitations of the claim.

Claim 6 is limited in part to “the method of claim 2,” as covered by Pedersen. Pedersen discloses on page 20, lines 20-23, that the DC/DC-converter that generates the supply voltages is based on a switched “capacitor” or LC (inductor-“capacitor”) principles. Therefore, Pedersen anticipates all limitations of the claim.

Claim 7 is limited in part to “the method of claim 6,” as covered by Pedersen. As noted in the rejection claim 4, the DC/DC-converter of Pedersen provides a DSP core voltage. The core voltage is split between operational units and internal memory units. Therefore, the core voltage comprises both “a supply voltage” and “a memory supply voltage.” Therefore, Pedersen anticipates all limitations of the claim.

Claims 9-15 recite essentially the same limitations as claims 1-7, and are rejected for the same reasons.

Claim 17 is limited to “a hearing device.” Pedersen discloses a hearing aid. See Abstract. The hearing aid of Pedersen includes “a processing unit” DSPM, “a

control unit” that is described on page 19, lines 16-18 as a monitor and “an oscillator unit” that is described on page 19, lines 1-18 as a PLL. As noted on page 19, the monitor adjusts the PLL, and the PLL supplies a clock signal to the DSP. The resulting frequency of the generated clock signal is based on “knowledge of computing power” as shown in the rejection of claim 1. Therefore, Pedersen anticipates all limitations of the claim.

Claim 18 is limited in part to “the hearing device of claim 17,” as covered by Pedersen. Pedersen discloses monitoring selected programs and controlling a supply voltage in response thereto. See page 20, lines 11-30. A “source unit” described as a DC/DC converter provides the “supply voltage.” The monitor described in the rejection of claim 17 determines the appropriate program and, thus, is operatively connected to the source unit and corresponds to the “control unit.” Therefore, Pedersen anticipates all limitations of the claim.

Claim 19 is limited in part to “the hearing device of claim 18,” as covered by Pedersen. As noted in the rejection of claim 18, a DC/DC “voltage converter” provides the “supply voltage.” Furthermore, Pedersen discloses generating a supply voltage either above or below the “battery voltage.” See page 20, lines 11-30, and page 21, line 26, through page 27, line 5. It is noted that the voltage provided by the converter of Pedersen is applied to a DSP core that includes processing elements and RAM. Hence, the low voltage corresponds to a “supply voltage” while the high voltage corresponds to a “memory supply voltage.” Therefore, Pedersen anticipates all limitations of the claim.

Claim 20 is limited in part to “the hearing device of claim 19,” as covered by Pedersen. Clearly, either the low or high voltage is generated based on whatever the current input is at any point in time. Therefore, Pedersen anticipates all limitations of the claim.

Claim 21 is limited in part to “the hearing device of claim 20,” as covered by Pedersen. Pedersen discloses on page 20, lines 20-23, that the DC/DC-converter that generates the supply voltages is based on a switched “capacitor” or LC (inductor-“capacitor”) principles. Therefore, Pedersen anticipates all limitations of the claim.

Claim 22 is limited in part to “the hearing device of claim 21,” as covered by Pedersen. As noted in the rejection claim 19, the DC/DC-converter of Pedersen provides a DSP core voltage. The core voltage is split between operational units and internal memory units. Therefore, the core voltage comprises both “a supply voltage” and “a memory supply voltage.” Therefore, Pedersen anticipates all limitations of the claim.

Claims 24-29 recite essentially the same limitations as claims 17-22, and are rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 8, 16, 23 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedersen.**

Claim 8 is limited in part to “the method of claim 1.” It is submitted that the duty cycle of the clock signal generated by the clock generator means (CGM) is not material to the overall operation of the hearing aid disclosed by Pedersen. In other words, Pedersen does not anticipate generating a clock signal with a 50%-duty cycle. However, this deficiency is overcome by an obvious modification.

In particular, the examiner takes Official Notice of the fact that clocks with 50%-duty cycles were well known in the prior art at the time of the invention. In fact, most introductory digital design textbooks and discussions illustrate clock signals with a 50%-duty cycle. There is no unexpected result in producing such a clock signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to generate a clock signal with a 50%-duty cycle because (1) Pedersen fails to stipulate duty cycle requirements and (2) it is a well-known industry standard.

Claim 16 recites essentially the same limitations as claim 8, and is rejected for the same reasons.

Claim 23 is limited in part to “the hearing device of claim 17,” as covered by Pedersen. It is submitted that the duty cycle of the clock signal generated by the clock generator means (CGM) is not material to the overall operation of the hearing aid disclosed by Pedersen. In other words, Pedersen does not anticipate generating a clock signal with a 50%-duty cycle. However, this deficiency is overcome by an obvious modification.

In particular, the examiner takes Official Notice of the fact that clocks with 50%-duty cycles were well known in the prior art at the time of the invention. In fact, most introductory digital design textbooks and discussions illustrate clock signals with a 50%-duty cycle. There is no unexpected result in producing such a clock signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to generate a clock signal with a 50%-duty cycle because (1) Pedersen fails to stipulate duty cycle requirements and (2) it is a well-known industry standard.

Claim 30 recites essentially the same limitations as claim 23, and is rejected for the same reasons.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SINH TRAN
SUPERVISORY PATENT EXAMINER

WFB